

CE CIT UOB
ITCE260 (Circuit Analysis)

Test 2

Time: 75 minutes

Date: 30 Dec 2015

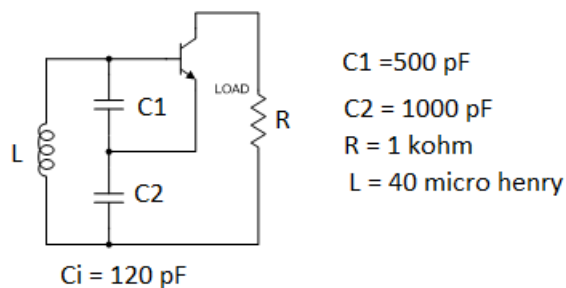
Dr. Riyadh Al-Hakim

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Q1 [40 marks]

The following is the basic circuit of a Colpitts oscillator

- 1) Draw its equivalent circuit and derive its frequency of oscillation and the gain condition for oscillation to occur and keep running.
- 2) Calculate the frequency of oscillation
- 3) Estimate minimum g_m of the transistor to keep oscillation running.



Q2 [60 marks]

In the following Schmitt trigger oscillator:

- 1) Plot its transfer characteristics
- 2) Derive and calculate its frequency
- 3) Plot the o/p voltage and voltage across C1

